

**In the Claims:**

Please amend claims 12 to 13 and add the following new claims 14 to 17:

Claims 1 to 10 (canceled).

11(previously presented). A method of treating hyperinsulinemia, said method comprising administering a pharmaceutically effective amount of melatonin for inhibiting insulin release to a living being suffering from said hyperinsulinemia, wherein said melatonin acts to inhibit said insulin release by interacting with a melatonin-specific receptor in  $\beta$ -cells of pancreatic Islets in said living being suffering from said hyperinsulinemia, wherein said pharmaceutically effective amount of said melatonin is from 0.01 to 200 mg.

12(currently amended). The method as defined in claim 11 ~~A method of treating hyperinsulinemia, said method comprising administering a pharmaceutically effective amount of melatonin for inhibiting insulin release to a living being suffering from said hyperinsulinemia, wherein said melatonin acts to inhibit said insulin release by interacting with a melatonin specific receptor in  $\beta$ -cells of pancreatic islets in said living being suffering from said hyperinsulinemia, wherein said administering to said living being~~ is performed by means of a subcutaneous implant with a release capacity of 0.01 to 200 mg of said melatonin or by means of an adhesive tape with transdermal release of 0.01 to 200 mg of said melatonin ~~is oral or parenteral.~~

13(currently amended). The method as defined in claim 11 ~~A method of treating hyperinsulinemia, said method comprising administering a pharmaceutically effective amount of melatonin for inhibiting insulin release to a living being suffering from said hyperinsulinemia, wherein said melatonin acts to inhibit said insulin release by interacting with a melatonin-specific receptor in  $\beta$  cells of pancreatic islets in said living being suffering from said hyperinsulinemia, wherein said administering to said living being is oral, parenteral, topical, rectal, subcutaneous, intravenous, intramuscular, intraperitoneal, intranasal, intravaginal, intrabuccal or sublingual.~~

14(new). A method of reducing insulin release from pancreatic islets, said method comprising administering a pharmacologically effective amount of melatonin to said pancreatic islets for reducing said insulin release.

15(new). The method as defined in claim 14, wherein said insulin release is stimulated by administration of KCl, glucose or forskolin prior to or during administration of said melatonin.

16(new). The method as defined in claim 14, wherein said pharmacologically effective amount of said melatonin is at least 0.2 nM.

17(new). The method as defined in claim 14, wherein said administering

comprises delivering a melatonin-containing nutrient solution to said pancreatic islets, and said melatonin-containing nutrient solution is 5  $\mu$ M in said melatonin.